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MICHAEL L. DUNN
SIMPSON & SIMPSON, PLLC
5555 MAIN STREET
WILLIAMSVILLE, NY 14221

EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,737	HOEDT, ERIC	
	Examiner	Art Unit	
	NATHAN M. CURS	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 in lines 1-4 recites that the single claimed device has an interface comprising a transmitter side at the transmitter end [of the optical data transmission line] and a received side at the receiver end [of the optical data transmission line]. This amounts to claiming that the device that has an interface spanning the length of the optical data transmission line, which does not make sense. The claim has been examined as if the device is located at *only one end* of the transmission line relative to *another* device at the other end.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5 and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. ("Yoshida") (US Patent No. 5615033) in view of Grivna et al. ("Grivna") (US Patent No. 7062177) and further in view of Darcie et al. ("Darcie") (US Patent No. 5790287).

Regarding claim 1, Yoshida discloses a method for the transmission of information via an optical data transmission line (fig. 3 and col. 5 lines 28-56), at least one end of which being provided with an optoelectronic interface having a transmitter side and a receiver side (fig. 4A elements 11 and 13 and col. 5 line 57 to col. 6 line 9), a light source which is modulated to carry information through a light signal by data transmission being provided transmitter side (fig. 4A element 13 and col. 6 lines 31-36), and a light-sensitive receive element, for converting light to an electrical signal that varies with intensity of light received by the receive element being provided receiver side (fig. 4A element 11 and col. 6 lines 25-30), said method comprising: amplifying (col. 6 lines 63-66, where AGC reads on amplifying) and processing a signal at an output of the receive element (fig. 4A element 15 and col. 6 lines 25-30) and monitoring and recording signal intensity of light received by the receive element independently of current strength of the electrical signal to obtain a signal monitoring output (col. 6 lines 37-53, where monitoring signal level is independent of current strength, where the content of the output signal informing the power supply control section reads on a recording of signal intensity, and where the output signal to the power supply control section reads on a monitoring output); displaying the recorded signal at a signal monitoring device to show the presence or absence of a data signal (fig. 4A elements

19 and 18 and col. 6 lines 37-48, where providing the output signal to the power supply control section is a display of the recorded signal to show presence or absence of a data signal); lowering intensity of light at the transmitter side to a minimum level such that the signal monitoring output at the receive-side end records and displays a missing input signal of the light receive element (fig. 4A elements 18 and 17 and col. 6 lines 37-62 and fig. 4A element 11 in light of fig. 3, where the opposite-end receiver records and display a missing input signal when the transmit-end transmitter laser is shut off); and again raising emitted light intensity above the threshold value (fig. 4A elements 20 and 18 and col. 7 lines 43-58). Yoshida discloses that the lowering of intensity of light at the transmitter side is done by shutting off the transmitter semiconductor laser power (col. 6 lines 31-36 and lines 49-53), but does not specifically disclose that the resulting zero intensity output is below a minimum threshold value of signal amplitude used for data transmission. Further, Grivna discloses optical transmission using lasers (fig. 2 VCSEL elements) and disclose that for optical transmission, a semiconductor laser is generally never fully turned off in normal operation (col. 8 lines 27-40). One of ordinary skill in the art at the time of the invention could have operating the semiconductor laser of Yoshida during normal data operations such that the laser is not fully turned off, and the result would have been predictable; namely, the data signal would have a minimum, non-zero threshold value of signal amplitude for data transmission. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to operate the semiconductor laser of Yoshida during normal data operations such that the laser is not fully turned off, for the predictable result of having a minimum, non-zero threshold value

of signal amplitude for data transmission. The combination of Yoshida and Grivna discloses sending a manually triggered continuous optical power signal for checking path integrity (Yoshida: fig. 4 elements 20 and 18 and col. 7 lines 43-58), but does not disclose repeatedly lowering and raising of the light intensity in time cycle in encoded form to provide an encoded signal monitoring output and evaluating the encoded signal monitoring output by a corresponding evaluation logic. Darcie discloses uses encoded interrogation pulses for checking path integrity which are achieved by gating an optical transmitter (figs. 1 and 6 and col. 7 line 61 to col. 7 line 36), where an opposite end receiver responds to the interrogation pulses (col. 9 lines 27-31, where the opposite end receiver responding to the interrogation pulses reveals inherent interrogation pulse evaluation means at the opposite end receiver). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination such that the transmitter laser disconnecting circuit of the combination is gated under control of the power supply control section, such that the transmitter outputs interrogation pulses for checking path integrity, with evaluation and response means at the opposite end receiver to respond to the interrogation pulses, since Darcie discloses that the interrogation pulses do not waste power like continuous power transmission does.

Regarding claim 2, the combination of Yoshida, Grivna and Darcie discloses a method according to claim 1, wherein a laser is provided as transmit element to provide a laser signal (Yoshida: fig. 4A element 14 and col. 6 lines 31-36) and a photodiode is provided as a receive element (Yoshida: fig. 4A element 12 in light of col. 5 lines 8-12), and a laser supply voltage signal is switched on and off by drive electronics of the laser

using a Laser Enable signal (Yoshida: fig. 4 elements 20 and 18 and col. 7 lines 43-58 and Darcie: figs. 1 and 6 and col. 7 line 61 to col. 7 line 36, as applicable in the combination, where the gating control signal of the combination reads on a laser enable signal).

Regarding claim 3, the combination of Yoshida, Grivna and Darcie discloses a method according to claim 1, wherein the laser supply voltage is switched on and off in encoded form (Darcie: figs. 1 and 6 and col. 7 line 61 to col. 7 line 36, as applicable in the combination, where the interrogation pulses are encoded light).

Regarding claim 4, the combination of Yoshida, Grivna and Darcie discloses a method according to claim 1 but does not disclose that the evaluation logic is implemented by software. However, the opposite end receiver of the combination includes a signal processor for processing received signals, like the transmit end (Yoshida: the fig. 4A element 15 and col. 6 lines 25-30 applicable to the opposite end, in light of fig. 3 right-side element 5). The office takes official notice that software programmable signal processors with software programmable logic are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to program the signal processing logic of the opposite end receiver to evaluate the interrogation pulses received at the opposite end receiver, since a software programmable signal processor has the advantage of controlling signal processing applications by way of simple programming instead of by requiring application-specific hardware.

Regarding claim 5, the combination of Yoshida, Grivna and Darcie discloses a

method according to claim 1 but does not disclose that the evaluation takes place in a separate microprocessor independent of evaluation of the normal data signal. However, the opposite end receiver of the combination includes a signal processor for processing the received data signals, like the transmit end (Yoshida: the fig. 4A element 15 and col. 6 lines 25-30 applicable to the opposite end, in light of fig. 3 right-side element 5). The office takes official notice that software programmable signal processors with software programmable logic are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an additional signal processor at the opposite end, and programming the logic of the additional signal processor to evaluate the interrogation pulses received at the opposite end receiver, since an additional software programmable signal processor has the advantage of using dedicated and controlled signal processing applications by way of simple programming instead of by requiring application-specific hardware.

Regarding claim 8, Yoshida discloses a device for the transmission of information via an optical data transmission line having a transmission end and a receiving end (fig. 3 and col. 5 lines 28-56), said device comprising: optoelectronic interfaces comprising a transmitter side and a receiver side (fig. 4A elements 11 and 13 and col. 5 line 57 to col. 6 line 9), the interface at the transmitter side having a light transmitter, and electronics which modulate transmitted light corresponding to a data signal to be transmitted to obtain a modulated input signal (fig. 4A element 13 and col. 6 lines 31-36) and having a light-sensitive receive element at the receiver side, an output signal of which is modulated analogously to the modulated input signal to obtain an

electronic modulated receive signal (fig. 4A element 11 and col. 6 lines 25-30), a monitoring device being additionally provided at the receiver side which, independently of the modulation of the receive signal, monitors and records the presence or absence of transmitted input signal as a signal monitoring output (fig. 4A element 19 col. 6 lines 37-53, where monitoring signal level is independent of the modulation data of the receive signal, where the content of the output signal informing the power supply control section reads on a recording of signal intensity, and where the output signal to the power supply control section reads on a monitoring output) and displays it at a signal monitoring device (fig. 4A elements 19 and 18 and col. 6 lines 37-48, where providing the output signal to the power supply control section is a display of the recorded signal to show presence or absence of a data signal), wherein, transmitter side, a device is provided for lowering and raising of intensity of transmitted light energy, the intensity of the transmitted light energy in the lowered state at a minimum level and the intensity of the light energy in a raised state being above a threshold value at which the monitoring device records the presence of a data transmission signal (fig. 4A elements 18 and 17 and col. 6 lines 37-62 and fig. 4A element 11 in light of fig. 3, where the opposite-end receiver records and display a missing input signal when the transmit-end transmitter laser is shut off, and fig. 4A elements 20 and 18 and col. 7 lines 43-58). Yoshida discloses that the lowering of intensity of light at the transmitter side is done by shutting off the transmitter semiconductor laser power (col. 6 lines 31-36 and lines 49-53), but does not specifically disclose that the resulting zero intensity output is below a minimum threshold value of signal amplitude used for data transmission. Grivna discloses optical

transmission using lasers (fig. 2 VCSEL elements) and disclose that for optical transmission, a semiconductor laser is generally never fully turned off in normal operation (col. 8 lines 27-40). One of ordinary skill in the art at the time of the invention could have operated the semiconductor laser of Yoshida during normal data operations such that the laser is not fully turned off, and the result would have been predictable; namely, the data signal would have a minimum, non-zero threshold value of signal amplitude for data transmission. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to operate the semiconductor laser of Yoshida during normal data operations such that the laser is not fully turned off, for the predictable result of having a minimum, non-zero threshold value of signal amplitude for data transmission. Also, the combination of Yoshida and Grivna discloses sending a manually triggered continuous optical power signal for checking path integrity (Yoshida: fig. 4 elements 20 and 18 and col. 7 lines 43-58) but does not disclose that the lowering and raising of intensity of transmitted light energy is clock-pulse-controlled or that it is encoded in correspondence with the lowering and raising of intensity of transmitted light energy, or an evaluation device being provided for the evaluation of the output signal encoded corresponding to the raising and lowering of the transmission signal. Darcie discloses uses encoded interrogation pulses for checking path integrity which are achieved by gating an optical transmitter (figs. 1 and 6 and col. 7 line 61 to col. 7 line 36), where an opposite end receiver responds to the interrogation pulses (col. 9 lines 27-31, where the opposite end receiver responding to the interrogation pulses reveals inherent interrogation pulse evaluation means at the opposite end receiver). It would

have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination such that the transmitter laser disconnecting circuit of the combination is gated under control of the power supply control section, such that the transmitter outputs interrogation pulses for checking path integrity, using the opposite end signal processor for evaluation and response for the interrogation pulses, since Darcie discloses that the interrogation pulses do not waste power like continuous power transmission does.

Regarding claim 9, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 8 wherein a laser is provided as a light transmission device (Yoshida: fig. 4A element 14 and col. 6 lines 31-36).

Regarding claim 10, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 9 wherein a separate microprocessor is provided for the evaluation of the encoded signal monitoring signal (Yoshida: the fig. 4A element 15 and col. 6 lines 25-30 applicable to the opposite end, as applicable in the combination for the interrogation pulses in light of fig. 3 right-side element 5).

Regarding claim 11, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 10 but does not disclose that the evaluation logic is implemented by software. However, the opposite end receiver of the combination includes a signal processor for processing the received data and interrogation signals (the fig. 4A element 15 and col. 6 lines 25-30 applicable to the opposite end, as applicable in the combination, in light of fig. 3 right-side element 5). The office takes official notice that software programmable signal processors with software

programmable logic are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to program the signal processing logic of the opposite end receiver to evaluate the interrogation pulses received at the opposite end receiver, since a software programmable signal processor has the advantage of controlling signal processing applications by way of simple programming instead of by requiring application-specific hardware.

Regarding claim 12, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 9 wherein clock-pulse-controllable drive electronics for a laser are provided as a device for raising and lowering the light energy (Yoshida: fig. 4A element 18 as applicable in the combination for interrogation pulses).

Regarding claim 13, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 12 wherein a device is provided for the clock-pulse-controlled switching on and off of laser supply voltage (Yoshida: fig. 4A element 17 as applicable in the combination for interrogation pulses).

Regarding claim 14, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 10 wherein clock-pulse-controllable drive electronics for a laser are provided as a device for raising and lowering the light energy (Yoshida: fig. 4A element 18 as applicable in the combination for interrogation pulses).

Regarding claim 15, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 14 wherein a device is provided for the clock-pulse-controlled switching on and off of the laser supply voltage (Yoshida: fig. 4A element 17 as applicable in the combination for interrogation pulses).

Regarding claim 16, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 11 wherein clock-pulse-controllable drive electronics for a laser are provided as a device for raising and lowering the light energy (Yoshida: fig. 4A element 18 as applicable in the combination for interrogation pulses).

Regarding claim 17, the combination of Yoshida, Grivna and Darcie discloses a device according to claim 16 wherein a device is provided for the clock-pulse-controlled switching on and off of laser supply voltage (Yoshida: fig. 4A element 17 as applicable in the combination for interrogation pulses).

Regarding claim 18, the combination of Yoshida, Grivna and Darcie discloses the method of claim 1 wherein the receive element comprises a photodiode (Yoshida: fig. 4A element 12 in light of col. 5 lines 8-12).

Regarding claim 19, the combination of Yoshida, Grivna and Darcie discloses the method of claim 1 wherein the light transmitter comprises a laser (Yoshida: col. 6 lines 31-36 and lines 49-53).

Regarding claim 20, the combination of Yoshida, Grivna and Darcie discloses the method of claim 19 wherein the laser is driven by a laser supply voltage that is switched off and on in encoded form (Yoshida: fig. 4A elements 18 and 17 and Darcie: figs. 1 and 6 and col. 7 line 61 to col. 7 line 36, as applicable in the combination).

5. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (US Patent No. 5615033) in view of Grivna (US Patent No. 7062177) and

further in view of Darcie (US Patent No. 5790287) as applied to claims 1-5 and 8-20 above, and further in view of Gavlik (US Patent No. 6745325).

Regarding claim 6, the combination of Yoshida, Grivna and Darcie discloses a method according to claim 1 but does not disclose that signal monitoring output provides data in the form of data words and a start bit is transmitted at the beginning of a transmitted data word and a stop bit at the end of the data word. Gavlik discloses uses serial RS-232 protocol, including data words with start and stop bits, between communication device components for asynchronous signaling (figs. 1 and 2 and col. 7 lines 38-52). One of ordinary skill in the art at the time of the invention could have used RS-232 protocol between the signal detection section and power supply control section of the combination and the results would have been predictable; namely, the RS-232 would provide serial communication between the devices with a protocol that corresponds to the asynchronous occurrence of detected signal faults. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use RS-232 protocol between the signal detection section and power supply control section of the combination for the predictable result of providing serial communication between the devices with a protocol that corresponds to the asynchronous occurrence of detected signal faults

Regarding claim 7, the combination of Yoshida, Grivna and Darcie discloses a method according to claim 6 wherein format specification of the data words corresponds to an RS 232 interface (Gavlik: col. 7 lines 38-52 as applicable in the combination).

Response to Arguments

6. Applicant's arguments filed 2 February 2009 have been fully considered but they are not persuasive.

Regarding claim 8 rejected under 35 USC § 112-2nd paragraph, Applicant presented no arguments, and the amendments do not overcome the remaining problem of claiming a single device comprising interfaces at both ends of a single transmission line (thus spanning the transmission line), which does not make sense.

Regarding the rejections under 35 USC § 103, in the Remarks page 8 lines 1-2 and page 9 line 27 to page 10 line 4, Applicant argues that the examiner's conclusion of obviousness is based on improper hindsight reasoning and that even when combined does not disclose or suggest the present invention. Regarding the assertion of improper hindsight, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. In this case, Applicant's arguments do not point out any knowledge in the combination which was not within the level of ordinary skill at the time the claimed invention was made, and also do not point out any knowledge gleaned only from the applicant's disclosure. Regarding the argument of missing limitations, Applicant's specific corresponding arguments are addressed below.

In the Remarks page 8 lines 3-6, Applicant argues that the prior art is nonanalogous art. However, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. In this case, the prior art references Yoshida, Grivna and Darcie are all in same field of endeavor as Applicant's invention, namely, optical communications, and are classified as such. The prior art reference Gavlik is reasonably pertinent to the particular problem with which Applicant was concerned with in claims 6 and 7; namely, both Applicant and the citation from Gavlik are concerned with data format; and more specifically, RS-232 data format.

In the Remarks page 8 lines 13-16, Applicant argues that Yoshida might suggest some hardware required for carrying out the method, but not "arranged in a manner or including software that permits analysis of the data transmission system". The "arrangement" portion of this argument is not persuasive because Yoshida as cited above (e.g. fig 4A elements 19 and 15 and their descriptions) is in fact arranged in a manner that permits analysis of the data transmission system. The "software" portion of this argument is not persuasive because software is not recited until claim 4, and in any case, modification of the combination to include the "software" limitation would have been obvious to one of ordinary skill in the art at the time of the invention as described above for claim 4.

In the Remarks page 8 lines 17-27, Applicant argues shortcomings of "standard hardware devices". This argument is not persuasive because the rejection is based on

the cited references, not ambiguous “standard hardware devices”; this argument fails to point out any specific problems with the actual combination.

In the Remarks page 8 line 28 to page 9 line 19, Applicant argues that the present invention does require the “permanently functionable extra channel" of Grivna. This argument is not persuasive because it fails to address the portion of Grivna used in the combination, regarding never fully turning off a laser. The “extra channel” teaching of Grivna does is not used in the combination. Further, the use of patents and patent application publications as references is not limited to what the patentees or applicants describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain.

In the Remarks page 9 lines 20-28 and page 11 lines 6-21, Applicant argues that Grivna fails to disclose several limitations. However, as can be seen in the combination, Grivna is a secondary reference, not relied upon for disclosing all the argued limitations. Applicant also argues against combining the device of Grivna with Yoshida. This argument is not persuasive because Grivna’s role in combination only involves a specific teaching regarding not fully shutting off a laser that is the basis for modifying Yoshida; the combination does not involve physically combining the devices of Grivna and Yoshida.

In the Remarks page 9 lines 29-36, Applicant argues against Darcie, but the argument is not persuasive because it argues against Darcie’s overall invention without addressing the specific teaching from Darcie regarding interrogation pulses, and its specific role in the combination.

In the Remarks page 10 lines 5-9, Applicant argues that “the mere fact that the similar hardware is used in the prior art for different purposes and that some individual dissected method features are disclosed in any of these documents, does not render the claimed combination obvious”. However, the obviousness rejections are based on a rationale of what would have been obvious to one of ordinary skill in the art after consideration of all the facts presented in the various citations. The references are part of the literature of the art, relevant for all they contain, including specific facts of select teachings within the references. Further, in determining obviousness, neither the particular motivation to make the claimed invention nor the problem the inventor is solving controls. The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts (see MPEP § 2141.III).

In the Remarks page 10 lines 14-27, Applicant argues that Yoshida’s shutting off of the laser after a missing signal should not be mixed up with giving any signal at all. This argument is not persuasive because Yoshida's step shutting off after a missing signal is not being presented as the "minimum threshold value of signal amplitude". Rather, the shutting off of the laser from Yoshida, *after combination*, is only the claimed “lowering” step, and is not part of the normal data transmission in the combination. However, this lowering is in fact “below the minimum threshold value of signal amplitude” in the combination, because the minimum threshold value of signal amplitude is a "not fully turned off" laser intensity, after combination with Grivna. In other words, when the normal data is being transmitted, the minimum data value is the “not

fully turned off" value based on Grivna, but when there is a missing signal, the transmitter is shut off; the intensity of an off laser is below that of a laser that is not fully turned off.

In the Remarks page 11 lines 1-5, Applicant argues that Yoshida teaches away from alternating drops below and elevations above a threshold value as a means for obtaining information on the system. This argument is not persuasive for two reasons. First, the existing shut "off" and manual-switch "on" in Yoshida already provide information about the system, namely, line status information. Second, the alternative lowering (to a laser "off" state") and elevating (to a laser "on" state) in the combination occurs by way of the interrogation pulses (after combination with Darcie) which replace the manual-switch interrogation of Yoshida to result in a more efficient use of the laser.

In the Remarks page 11 lines 22-27, Applicant argues that Darcie's interrogation signal would be void when using the second channel of Grivna. This argument is not persuasive because the combination does not involve any "second channel" teaching from Grivna, nor is it required to.

In the Remarks page 11 line 27 to page 12 line 2, Applicant argues that the combination of Yoshida and Darcie would never result in the output of the monitoring device being used as a further channel for encoded information. This argument is not persuasive because a "further channel" is merely an unclaimed intended use and because the combination is not based only on Yoshida and Darcie.

In the Remarks page 12 lines 3-5, Applicant argues that it appears to be impossible that one of ordinary skill in the art at the time of the invention could have

combined the cited prior art references so as to arrive at the instant invention. This argument is not persuasive because Applicant's attempts to show such impossibility are based on Applicant's inability to combine whole references together, when the actual combinations of the rejections do not attempt to do so, nor are they required to do so. The rationales of the obviousness rejections establish that one of ordinary skill in the art at the time of the invention could have combined the specific cited teachings.

In the Remarks page 12 lines 5-8, Applicant argues that even if combined, the combination would not teach or suggest that the output of the monitoring device should be triggered such as to yield encoded information. This argument is not persuasive because the claimed "encoded signal monitoring output" is only triggered in the sense that it responds in some way to the transmitter's raising and lowering of light intensity after the light is received by the receive element. Some kind of external information/data stream modulation source is not inherent in the claimed "encoded form" of the raising and lowering; further, the interrogation pulses of the combination are themselves a form of encoding. And the claimed encoded signal monitoring output waveform is not even necessarily the same waveform as that of the raised and lowered light; the claimed signal monitoring output is only claimed as an output based on the monitoring and recording of the output of the receive element.

In the Remarks page 12 line 18 to page 13 line 6, Applicant argues that Gavlik does not cure the defects of Yoshida, Grivna and Darcie. However, as already established above, Yoshida, Grivna and Darcie are not deficient. Further, Gavlik is not an unrelated system as argued by Applicant, because it provides a teaching on data

format and is used as a secondary reference in the rejection of claims 6 and 7, which are directed to data format.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN M. CURS whose telephone number is (571)272-3028. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/NATHAN M CURS/

Primary Examiner, Art Unit 2613